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ABSTRACT

The report summarizes evaluation findings on the Learning Centre, a research and demonstration centre of the Calgary Society for Students with Learning Difficulties. The report addresses evaluation of formal research projects (on such topics as instrumental enrichment with low achieving adolescents); pilot projects (such as an animation film program and a mathematics skill group); the diagnostic and treatment components of the service program; and the public and professional education program which provides credit, noncredit, and practicum courses, seminars, and workshops. Three points are made in a summary of evaluation findings: that the centre has developed pilot research programs of promise; that the centre has established clinical credibility in the community; and that the centre has made a valuable contribution in the area of public and professional education. Recommendations are offered for the research program, service program, public and professional education program, and for the learning centre model. (CL)

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Evaluation of the Calgary Learning Centre

Summary

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The Evaluation of the Learning Centre

Richard Conte, Marilyn Samuels and Harry Zirk
The Learning Centre
Calgary, Alberta

Summary

Funding Provided by Planning Services Branch

Alberta Education

December, 1983

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The Committee members and their affiliations are listed below.

Dr. Roy Brown: Calgary Society for Students with Learning Difficulties (1982-83)

Dr. Guy Doll: Calgary Catholic Board of Education (1980-83)

Ms. Pat Gillespie: Calgary Board of Education (1981-82)

Dr. Neil Hutton: Calgary Society for Students with Learning Difficulties (1980-82)

Ms. Jean van der Lee: Calgary Board of Education (1980-81)

Dr. Harry Sherk: Planning Services Branch, Alberta Education (1980-83)

Ms. Stephanie Wright: Calgary Board of Education (1982-83)

THE EVALUATION OF THE LEARNING CENTRE
(Summary Report)

I. INTRODUCTION

This document is a summary report of the evaluation of the Learning Centre, the research and demonstration centre of the Calgary Society for Students with Learning Difficulties (CSSLD). Those readers who wish additional information may obtain the complete evaluation report from Planning Services Branch, Alberta Education. The CSSLD is a consortium of eight agencies (Alberta Children's Hospital, The University of Calgary, The Calgary Board of Education, The Calgary Catholic Board of Education, The Calgary Association for Children and Adults with Learning Disabilities, The Calgary Board of Health, Alberta Teachers' Association and the Kinsmen Club of Calgary) which are concerned with delivery of service to learning disabled persons. The purpose of this report is to describe the activities of the Learning Centre during its initial three years of operation and to assess the effectiveness of the programs which have been developed.

A. The Mandate of the Learning Centre

The Learning Centre is concerned with improving service to learning disabled persons by means of an integrated program of reseach-demonstration, direct service to clients, and public and professional

education. The major thrust of the work at the Centre is to contribute to the development of more effective approaches to assessment and treatment of learning disabilities, to critically evaluate the effectiveness of these approaches, and to disseminate this information to other professionals and the public generally. The goals of the Centre also stress that these activities should be integrated; i.e., there should be continuity between the knowledge gained in clinical practice, the questions pursued in research, and the content of the public and professional education program. Thus, even though the Learning Centre provides direct service to clients by providing a diagnostic and assessment service, it is intended that these activities take place in a larger context of research and demonstration. In the course of providing service to clients, knowledge will be gained, data will be collected, and this information will be communicated to other professionals who work with learning disabled persons.

B. The Structure of the Evaluation

Even though the various facets of the Learning Centre mandate are meant to function as an integrated whole, each has been treated as a separate entity in this report. Thus, the next three sections each deal with a major aspect of the Learning Centre mandate: research, service, and public and professional education. These

are followed by a section which considers more general issues of the Learning Centre model; i.e., the organizational goals and policies. In reading this report it should be kept in mind that it covers the initial three period of the Learning Centre's operation. This period has been regarded primarily as a time to develop a body of treatment programs, and a format for implementing the public and professional education program. In this sense this is a formative rather than a summative evaluation (Scriven, 1967).

This evaluation has been carried out by the internal staff of the Learning Centre with the assistance of an external consultant, Ms. Nancy Marlett. Part I is the report of internal staff of the Learning Centre; Part II is the external consultant's critical review of the internal report.

II. RESEARCH PROGRAM

The purpose of research at the Learning Centre is:

1. To contribute to the understanding of the causes of learning disabilities,
2. To evaluate treatment and assessment approaches used in providing service to learning disabled persons.

Research at the Learning Centre is conducted in two stages: a program development or pilot stage and a formal stage. The purpose of the pilot stage is to

refine the methods used in implementing a treatment and to develop an appropriate set of evaluation measures. If pilot testing suggests that a program is promising, then it will be proposed as a formal project, and application will be made for external funding.

A. Formal Research Projects

There have been four formal research projects initiated by the Learning Centre, all of which have been funded by Planning Services Branch, Alberta Education.

1. Cognitive Correlates of Reading and Spelling Patterns: An Investigation of Boder's Method of Subtyping Disabled Readers.

   Investigators: Richard Conte, Marilyn Samuels and Harry Zirk

   Final Report Due: December, 1983

   In the Boder subtyping methodology it is assumed that there are two basic types of cognitive deficit related to retarded reading performance (auditory-linguistic, and visual-spatial), and that these subtypes can be distinguished by means of analysis of several reading and spelling measures. This study was undertaken because the Boder subtyping methodology is one which can be readily implemented in the clinical setting. However, there is insufficient documentation to include it as part of a clinical assessment battery. Thus, the purpose of this study was to investigate the validity of the inferences derived from the test.

   Preliminary analyses suggested that while the test provides a good index of examinee's phonic skills, there is evidence of an age-related bias in it results; i.e., older children are more likely to be classified in the visual-spatial subtype. Also, the measures utilized do not appear to provide a reliable index of visual-spatial processing.

2. Presentation Rate Effects during Paired Associate Learning as a Method of Diagnosing Attention Disorders.

Investigators: Richard Conte, Harry Zirk and Marilyn Samuels

Final Report Due: April, 1984

The purpose of this study is to improve upon existing methods of measuring attention span. According to information obtained at referral, approximately two-thirds of the children seen at the Learning Centre show signs of attention disorder. Many of these children are not hyperactive, so that observational methods are not particularly effective in monitoring their behaviour.

In this study the measure of attention span is defined in terms of the amount learned under different study time conditions. It is assumed that children with short attention span will learn more effectively when brief study periods are used, because longer study periods will exceed their limited attention span.

Preliminary results indicate that the use of this methodology results in assessment outcomes consistent with clinical judgements of short attention span, and it may be also useful in monitoring progress in treatment.

3. Instrumental Enrichment with Low Achieving Adolescents.

Investigators: Marilyn Samuels, Audrey Roadhouse, and Richard Conte

Final Report Due: September, 1984

The purpose of this study is to evaluate the impact of Instrumental Enrichment (I.E.) on academic performance, thinking and reasoning skills, classroom behaviour, and attitudes toward education of low achieving adolescents. I.E. is the method of treatment based on Feuerstein's theory of cognitive modifiability. It is a two-year program in which students work at structured problem solving activities. The tasks are varied so that the utilization of a number of different thinking skills or strategies is required. The teacher of the program attempts to identify patterns of cognitive deficiency in each student, and helps them cope more effectively

with their learning difficulties. This project was undertaken with the support and encouragement of Van Horne Secondary School after several of their students participated in a pilot I.E. project at the Learning Centre.

4. The Method of Repeated Readings in the Treatment of Severely Disabled Readers.

   Investigators: Richard Conte, Rita Humphreys and Deborah Alexander

   Final Report Due: October, 1984

   This study is being conducted in collaboration with the Foothills School Division. Its purpose is to evaluate the effectiveness of this method of reading instruction in which students listen and read along with tape recorded books. This study was initiated after positive results were obtained in pilot work conducted at the Learning Centre (see the discussion of the Repeated Readings program in the next section on pilot projects). The purpose of this study is to evaluate the effectiveness of this method of instruction on reading achievement and on attitudes toward reading. In this study the program is being implemented in regular school classrooms and resource rooms. Learning Centre staff have provided the inservice instruction to the teachers in the Foothills Schools, and are collecting pre-post test data.

B. Pilot Projects

The pilot projects described in this section represent the initial attempts of Learning Centre staff to develop and demonstrate the effectiveness of remedial programs. There were two general goals of the pilot projects:

1. To use a wide range of approaches in order to determine which would be most effective with this population of clients,

2. To implement those programs which were found to be effective during pilot testing, in regular school settings.

The program descriptions which follow have been abstracted from more extensive reports which may be obtained from the Learning Centre.

1. The Method of Repeated Readings: This is a method of reading instruction in which the student repeatedly listens to tape recorded books and stories, learns to track words along with the tape, reads along with the tape, and eventually learns to read the material without the tape. This program has been implemented with 6 boys, aged 8 to 12 years. In the work at the Learning Centre it has been demonstrated that the program can be used with more severely disabled readers than had been demonstrated in previously published reports. The program has been regarded as sufficiently promising that it is being evaluated in a collaborative study with the Foothills School Division.

2. Instrumental Enrichment Parent Training Program: Instrumental Enrichment (I.E.) is a program of cognitive modifiability designed to enhance thinking skills. It consists of a set of structured problem solving exercises. As the student works at the problems, the teacher attempts to identify cognitive deficits, and intervenes to help the student cope more effectively with the difficulties. In this program the parents of learning disabled children were taught to be the I.E. instructors for their own children. They met regularly with Learning Centre staff for instruction in the use of the I.E. instruments and intervention procedures. The program is being conducted for two years, and the effects of I.E. instruction on measures of expressive and receptive language, reasoning skills, and parent preceptions of their children are being evaluated. Preliminary results indicate that in the first year of the program the group of children gained five grade levels in reasoning skills and gains of over two years in some expressive language skills.

3. Instrumental Enrichment for Pre-Adolescents: The purpose of this program was to determine if the

I.E. program could be implemented in a group of children who were somewhat younger than those who typically receive this form of treatment. Two boys and two girls (aged 9-11) participated in this program which ran for 8 months. The effects of I.E. on measures of receptive and expressive language were evaluated. Initial results indicated gains of two years in the ability to use words in sentences. Strong gains were also noted in auditory association and auditory reception.

4. Cognitive Behaviour Modification and Listening Skills: Cognitive Behaviour Modification (CBM) is a technique of self-instruction which was developed as a method of treatment for attention-disordered children. In this method children are taught a set of self-instructional commands (such as stopping to define a problem, developing a plan, checking progress) which are designed to promote effective problem solving.

   The purpose of this study was to investigate the impact of CBM on listening skills. Two groups were contrasted: One received listening skills training (e.g., selecting facts and details, selecting main ideas, and summarizing) and orienteering; the other received the same training as the first group, but also received CBM. The results of the study suggest that CBM did not produce any further gains than those realized with listening skills training alone.

5. Cognitive Behaviour Modification Case Studies:

   The thrust of the case studies has been to investigate the utility of CBM in a population of children who have both attentional and language difficulties. Pilot work has suggested that these children cannot utilize oral self-instructional commands. As an alternative, CBM has been implemented using gestural (i.e., sign language) commands, and preliminary data suggest that this may be the treatment of choice. A study investigating the relative efficacy of gestural vs oral self-instructional commands in attention disordered children with language deficits is in progress.

6. Auditory Discrimination in Depth: Auditory Discrimination in Depth (ADD) is a multisensory program which attempts to develop auditory-perceptual skills basic to reading and writing. One of the chief characteristics of this approach is that it attempts to build

associations between the auditory elements of speech sounds and the physical sensations of making the sound.

The purpose of this study was to investigate the effects of ADD on spelling skills in a group of learning disabled children. The program was conducted for 20 sessions over a 10 week period in a group of four students (average age 12 years 2 months). Of the three students for whom there was complete pre-post test data, two of them made gains of over 1 year in spelling. The third student showed a slight decline.

7. Mathematics Skills Group: This program utilized a prescriptive math approach to serve the individualized needs of four students with a history of low achievment in mathematics. The basic approach was to use criterion referenced tests to pinpoint skill deficits, and then to teach directly to the deficit areas.

   This program was conducted for 10 weeks and was evaluated in terms of performance on the Stanford Diagnostic Mathematics Test and by means of a teacher checklist. The results indicated that the group of students gained two years on the number system and numeration subtest of the Stanford Diagnostic. Somewhat smaller gains were made for the Computations subtest. A follow-up to this study is currently being planned in which a prescriptive vs math strategies approaches are being contrasted.

8. A Communication Skills Group for Learning Disabled Adolescents: This study investigated the efficacy of Wiig's Let's Talk program, which involves group training of 33 selected speech acts and speech act sequences. This program was conducted for a 10 week session with 10 learning disabled adolescents. The effectiveness of this program was studied in terms of measures of communication skills, receptive and expressive language, and reasoning skills. Analysis of pre-post scores indicated gains of 1 year for receptive vocabulary, but no group change for speech act formulation ability or reasoning skills.

9. Orienteering: Orienteering is a recreational activity in which participants must find their way from a starting point to an end point or goal. Generally, the activity takes place outdoors, and requires that the participants read maps, translate map lines to road distance, and

move quickly through many different types of terrain. Orienteering has been used at the Learning Centre to teach a number of learning strategies (e.g., text book usage, time management, questioninging and listening skills). The program has been run as a summer program for two years and 22 sixth children have participated. Analysis of pre-post scores indicated that short term intervention with Orienteering can lead to significant gains in listening comprehension, textbook usage and ability to make use of visual aids.

10. The Family and Treatment: Family involvement in Learning Centre programs has taken three different forms. First, at the time of assessment, the parents may be involved in a series of three evening meetings in which information on learning disabilities, and the Learning Centre is presented. Second, parents of children attending Learning Centre programs may attend parenting skills groups. Eight such groups have been conducted lasting 4-8 sessions with 8-10 parents per group. Discussions focus on behaviour management, motivation, and changes in the home environment which may influence the outcome of treatment. Third, family therapy is offered as an integral part of treatment when it is suspected that family systems are hindering a child's progress in coping with a learning difficulty. Thus far, 15 families have participated. The duration of therapy has ranged from 2-10 sessions. The focus of the Learning Centre family therapy program has been to adapt the Milan model of therapy to the needs of the learning disabled population.

11. Adolescent Wilderness Challenge Program: The goal of this program is to enhance self-awareness and self-confidence by introducing a group of learning disabled adolescents to highly challenging situations. The program has three components: wilderness activity, community service with the handicapped, and regular on-going group discussion and writing. This program has been conducted on two occasions and fifteen 13-15 year olds have participated. Initial results suggest that the participants showed more initiative and began trying a variety of activities which they had not been willing to participate in previously. More work needs to be done developing objective measures of the impact of this program.

12. Animation Film Program: The purpose of this program was to teach selected learning strategies and expressive language skills to learning disabled students by means of film animation. Twenty-eight students have participated in this program which has been conducted on five occasions. Each student was required to make their own animated film under the tutelage of a 16 year-old same sex volunteer role model. Most emphasis in this program has been placed on careful planning of the film and exploring alternative methods of communicating ideas. The film topics have varied from year to year. In the first year each child simply made up a story. In subsequent years attempts were made to introduce more academic content from the school curriculum. These "academic" films might be viewed as research papers in which students who were delayed in reading and writing skills made use of an alternative method of communication. In the course of making these films a number of other skills were taught such as note-taking, outlining, and textbook usage. In addition, students were asked to give oral presentations of their film-idea as it began to take shape.

C. Discussion of the Research Program

The Learning Centre research program has succeeded in getting a number of projects underway, and providing preliminary data which might be used in building a formal research program. In terms of formal research projects, both assessment and treatment studies have been conducted. In the pilot projects a wide spectrum of approaches has been taken. Some programs have attempted to teach specific academic skills (Mathematics Skills group, Repeated Readings), while others have focused on general problem solving strategies and thinking skills (Instrumental Enrichment and Cognitive Behaviour Modification). At this point it is very important to

refine these programs, attempt them with larger groups of children and to employ control groups so that the effects of the programs can be pinpointed. This process is underway with two pilot projects (Instrumental Enrichment and Repeated Readings) which have been implemented as controlled studies in regular school systems. It is strongly recommended that this course be followed with the other programs which show promise. Efforts should also be made to develop objective measures for the family services, animation film program and the adolescent wilderness program.

III. THE SERVICE PROGRAM

There were two areas of the Service Program considered in this evaluation: the diagnostic service and the treatment service. These two aspects of the service program were evaluated by means of questionnaire and interview data which attempted to ascertain if the parents and teachers of clients were satisfied with the service received. In addition, the utility of diagnostic tests which are commonly used was evaluated by means of questionnaire responses obtained from Learning Centre clinical staff.

A. Assessment

Evaluation of the assessment service focused on the procedures used to communicate assessment information and

the content of the assessments performed. Questionnaires were received from 60 teachers (return rate 82%) and 70 parents (88% return rate). Over 90% of the parents and teachers who responded indicated that the post-assessment conference was a good use of their time and that the remedial goals were presented in such a way that they could be clearly understood. Also, over 90% of the teachers indicated that they would refer other children with similar problems to the Learning Centre. However, only 76% of the teachers indicated that the Learning Centre staff listened to their viewpoint at the post-assessment Conference.

All the parents and teachers who were interviewed indicated that they found the information in the assessment reports useful and that it contributed to their understanding of the child's learning difficulty.

B. Treatment

Responses to treatment programs were also very positive. For example, 95% of the teachers agreed that the remedial goals set were appropriate; 91% agreed that the treatment program suited the remedial goals; 84% agreed that the children benefitted from attending the Centre. However, only 71% of the teachers agreed that they were adequately involved in the remedial program and 65% agreed that they were involved in evaluating the effectiveness of remedial programs. The least positive

response received from parents was for the question regarding their involvement in evaluating the remedial program (67% agreed). However, parents felt more involved in planning the remedial program (86%) than teachers (65%).

Parents were also asked to evaluate the degree to which program recommendations had been met. For programs carried out at the Learning Centre, parents indicated that the recommendations had been met in approximately two-thirds of the cases. Responses were less positive for recommendations which pertained to school-based programs.

Additional analyses were conducted in order to examine the content of the recommendations. It was found that no outcome goal was specified in approximately 50% of the recommendations analyzed. Instead, they contained only a statement that a program would be carried out, but no specific objective was set. It was also apparent they few recommendations were concerned with family issues or with socio-emotional factors.

C. Diagnostic Test Evaluation

The purpose of this analysis was to determine which tests were found to be most useful among clinical staff at the Learning Centre. Each staff member was asked to list 15 tests which were most frequently used for assessment. Subsequently, a number of evaluative

questions were asked about each test listed.

The results of this analysis indicated that the most frequently used test was the Slingerland Screening Test (an un-normed test which provides information on basic information processing pathways such as auditory and visual discrimination and memory functions, kinesthetic skills, and cross-modality skills). Also, the responses indicated that this test was regarded as the most valid, and the most useful for planning a remedial program of all the tests listed.

Interestingly, the test which was rated lowest across all the evaluative categories was also a test which provides information on a wide range of information processing functions, The Woodcock-Johnson Psychoeducational Cognitive Battery. Unlike the Slingerland, the Woodcock-Johnson is an extensively normed test.

Comparison of responses regarding two commonly used reading tests (the Ekwall Reading Inventory and the Woodcock Reading Mastery Test) also indicated that the former test which is not normed received higher ratings for validity, and usefulness in planning a remedial program. The feature which most clearly distinguishes the two tests is that the Ekwall utilizes high interest passages to assess reading, whereas the Woodcock utilizes

rather unusual material, such as cloze tests and nonsense word lists.

D. Discussion

While parents and teachers were quite positive about the usefulness of the assessment information and the value of the treatment program, one must be very careful in interpreting these data since they were obtained from a potentially biased sample of observers; i.e., those who have received service from the Learning Centre. To the present time no attempts have been made to determine either the reliability or validity of the assessments made by Learning Centre clinicians. As a research and demonstration agency, the Learning Centre should routinely gather this type of information, both for its own internal purposes and also for public information.

Quite apart from the reliability or validity of the assessments, the present data suggest that action needs to be taken regarding the procedures used to make treatment recommendations, which are based on the assessment findings. Approximately 50% of the recommendations which were reviewed for this report only specified that some action should be taken, but no outcome goal was specified. This method of setting recommendations eliminates accountability from the assessment process. Also, few recommendations were concerned with the role of the family in the treatment

process and few pertained to social-emotional factors. These characteristics of the recommendations run counter to the stated goals of the Centre; i.e., to attempt to treat the whole person, and to use a multidisciplinary approach to assessment and treatment.

These data have been discussed at "in house" conferences on assessment. A set of new guidelines are being drawn up, and also a more stringent process for reviewing the content of assessment report recommendations is being implemented.

Analysis of the questionnaire responses also indicated three potential problems surrounding the treatment process. First, nearly 30% of the teachers who responded indicated that they did not feel sufficiently involved in planning the remedial program. Second, only 65% of the teachers and 67% of the parents felt involved in the evaluation of the treatment programs. Third, only 72% of the teachers felt that they were able to integrate the Learning Centre program into the classroom.

These findings suggest that Learning Centre staff need to make greater efforts to keep teachers and parents informed and involved in the remedial process. To this end, a formal structure, in which parents and teachers would be asked to give a written evaluation of remedial programs, is being considered. Further, parent and teacher involvement in the remedial process would be

encouraged if outcome goals were clearly specified in assessment report recommendations.

Analysis of staff ratings of diagnostic assessment tests indicated that extensive norming was not an important determinant of the validity or utility of a test. Two of the tests which received the highest ratings (The Slingerland Screening Test and the Ekwall Reading Inventory) are not normed. It is significant that both of these tests use materials and tasks which are directly related to classroom activities.

IV. PUBLIC AND PROFESSIONAL EDUCATION

This aspect of the Learning Centre mandate has focused on three general areas:

1. Providing information to the public and to professionals through lectures, seminars, and by providing access to resource materials and books relevant to the assessment, treatment, and the general understanding of learning disabilities.

2. Providing full-year courses, short courses and intensive workshops for professional training of teachers, psychologists and other involved in the delivery of service to learning disabled persons.

3. Providing practicum experience in assessment and individual and group treatments at the Learning Centre to university students in various faculties related to the Learning Disabilities field.

The major features of the Learning Centre Public and Professional Education Program have included:

1. The initiation of a practicum course in assessment and treatment of learning disabilities at the University of Calgary

2. The formation of a Learning Disabilities Resource Library in collaboration with the Junior League of Calgary, the University of Calgary, Foothills Academy, and Calgary Academy.

3. Training of over 200 professionals in workshops on assessment and treatment methods.

4. Presenting workshops and lectures by distinguished researchers including Donald Meichenbaum, Tanis Bryan, Reuvan Feuerstein, and Donald Deshler.

5. Offering over eighty inservice presentations to teachers in the Calgary School Boards.

A. Data Presentation

The evaluation of education functions consisted of analyses of responses to questionnaire items from those in attendence at courses, workshops and inservice presentations. Analysis of these responses indicated that the most positive pertained to the preparation and commitment of the instructors (Learning Centre staff in most instances). For example, for the course evaluation, 83% agreed that the instructor displayed command of the subject area, and 87% agreed that the instructor showed commitment to the subject matter of the course. Other positive responses were obtained for questions regarding the relevance of the course to the professional work of the participants (90% thought so), and 78% felt that their time had been well spent taking the course. Less positive responses were found concerning the efficient use of class time (65%), and the quality of the feedback from the instructor (61%). For inservice presentations

responses were obtained from 187 participants who attended 15 presentations (approximately 15% of the actual number of inservice presentation given). The respondents indicated that the presenters were well-prepared (98% agreed), and committed (98% agreed). Over 90% agreed that they could not have received such a presentation from any other source. Less positive responses were obtained regarding the balance of theory and practice (77% agreed), the quality of the audio-visual materials (77%), and the relevance of the presentation to the professional interests of the respondent (78%).

B. Discussion

The reactions of participants at Public and Professional Education functions have been very positive. They regarded these functions as informative, and indicated that the staff of the Learning Centre were knowledgeable and effective communicators.

New directions in the Public and Professional Education program include greater attempts to assess the needs of local professionals. A questionnaire is being sent to school board personnel in order to determine their needs in the area of learning disabilities. Also, the Learning Disability Resource Library will open at the Learning Centre in Spring, 1984.

V. THE LEARNING CENTRE MODEL

The primary data source for this aspect of the evaluation was a questionnaire completed by members of the Board of Directors. This questionnaire focussed on three general issues:

1. The goals of the Learning Centre,
2. The functioning of the consortium,
3. Future directions of the Learning Centre.

A. Data Presentation

The questionnaire was sent to 18 present and former Board members, and 12 completed questionnaires were returned. The findings from the Board questionnaire may be summarized with three general statements. First, there was considerable diversity of opinion regarding the function of the Centre which was held in highest regard. Some members were primarily interested in service; others were more concerned with the teaching and research mandate. There was some indication that the diversity of opinion was problematic: seven of twelve respondents commented that the principal disadvantage of the consortium was that it could be unwieldly - that the range of interests was too great to enable the Board to function efficiently. Nevertheless, 10 of the twelve respondents agreed that the consortium has worked well and that its greatest benefit is the possibility of cooperative activities. Second, eleven of the twelve

respondents indicated that the original goals and aims of the Learning Centre were still relevant. However, this statement should be considered in light of the fact that there may not be total agreement regarding the nature of the goals. Third, there was general agreement that the level of financial support has not been sufficient to fulfill the mandate of the Learning Centre.

B. Discussion

One of the issues which emerged from the analysis of the Board of Directors questionnaire was that there was some diversity of opinion regarding the priorities of the Learning Centre. Three actions have been taken to explore this issue in more detail. First, there are a number of working meetings planned between the Board of Directors and the Staff. Second, a number of joint Board-Staff committees are being formed to deal with the administration of the Learning Centre. These include committees for research review, ethics, fundraising, facilities, personnel, and public relations. Each Board and Staff member will be a member of at least one committee. Third, increased dialogue between consortium agencies and Board members will encourage a common understanding of the goals of the Learning Centre.

VI. SUMMARY

The Evaluation of the Learning Centre may be summarized in the following three points.

1. The Learning Centre has developed a body of programs as pilot research projects which appear to have promise as methods of treating learning difficulties. In terms of the goals of the Learning Centre as a research and demonstration agency, it is extremely important that the pilot work is adequately followed-up; i.e., those projects which show promise should be proposed as controlled studies in the near future.

2. As indicated by responses obtained from parents and teachers, the Learning Centre has established clinical credibility in the community. The weakest area of service delivery concerned the manner in which recommendations were written. A large portion of the recommendations did not have well-specified outcome objectives. More stringent review procedures were recommended as a remedy.

3. The Learning Centre has made a valuable contribution in the area of public and professional education. The feedback received from participants indicated that Learning Centre educational activities were regarded as informative, and that the staff presenting the information were knowledgeable and effective

communicators. In some cases there were concerns noted regarding the organization, and requirements of some of the courses and workshops.

VII. RECOMMENDATIONS

These recommendations have been taken from the complete evaluation report. Some of the recommendations have not been specifically dealt with in the text of this Summary Report. Interested readers should consult the complete report.

1. Research Program

a. There should be more extensive investigation of the role of parents as teachers in remedial programs for learning disabled students.

b. Future research projects should attempt to provide information on the proper balance between academic remediation and strategies training.

c. The pilot projects which have been completed should be implemented and evaluated in regular classrooms.

d. The Learning Centre should examine the long-term effects of remediation by following the progress of clients for several years.

2. Service Program

a. There must be greater efforts taken to insure that parents and teachers are more involved in planning and evaluating treatment programs.

b. Assessment report recommendations should include clearly stated program objectives which can serve as the basis for evaluation.

c. Learning Centre staff should conduct "in house" reliability studies of assessment reports and program recommendations.

3. Public and Professional Education

   a. A survey should be conducted in order to determine the needs of local professionals in the area of learning disabilities.

   b. There should be efforts made to integrate the Education program with the needs of the consortium members.

   c. There should be greater integration of the Education programs with clinical and research programs thereby providing more "in depth" training of professionals in this field.

4. The Learning Centre Model

   a. To the present time the multimandate has functioned most effectively in the area of Feuerstein's Instrumental Enrichment. It is important for the multimandate to become operational for other programs. The pilot projects should serve as the basis for expanding in this area.

   b. According to the analysis of assessment report recommendations, most of the activity of the Learning Centre has been academically oriented. Few assessment report recommendations concerned family issues or personal-social goals. It may be advisable to provide additional training for staff so that they will be able to operate effectively in these areas.

   c. Analysis of the Board of Directors Questionnaire indicated that there exists a wide range of opinion regarding the priorities of the Learning Centre. There should be regular meetings between Board and staff to promote greater understanding and to formulate meaningful goals and objectives.

   d. Analysis of the Board of Directors Questionnaire indicated that there was insufficient financial support for the Learning Centre to fulfill its mandate. The Board must be diligent in pursuing a secure financial future for the Learning Centre.

Report of External Evaluation Consultant

Learning Centre Evaluation

January 1984

N.J. Marlett

This report is submitted as part of the ongoing commitment to Alberta Education re the evaluation of the Learning Centre. Because of the newness of the concept of the consortium model and its three pronged approach to service, research and education, it was considered important to have an external person, familiar with evaluation models as an external consultant.

The consultantwas involved in the initial evaluation model, taught an inservice course on the use of Individual Education Plan (IEP) at the Learning Centre, assisted in the early development of the questionnaires, and has been available on call when requested by the Learning Centre staff. This involvement has related to issues of the establishment of a standardized battery for clients, tracking processes, Goal attainment Scaling, final report format. This report was prepared independently, based on evaluation materials and reports over the 3 year time period, visits to the Learning Centre and yearly sessions with the Research staff of the Learning Centre. While this involvement may appear to have compromised the "external element" of this report, it has nevertheless allowed insights into the situation beyond those usually available to an external person. While the position of external evaluation consultant was a novel, and often ambiguous role, I appreciated the opportunities it afforded in experimenting with this model. I would recommend its use in these projects, especially those in new areas where existing evaluation models are not readily available.

I would like to formally applaud the foresight of the Department of Education in supporting evaluation of a beginning program, the Board's willingness and support of this project and the dedication of the Research staff in collecting and analyzing evaluation data within an evolving concept.

This report consists of the following sections:

evaluation process and report
discussion of the applied research model
- integration of the concept into the LC
- design problems in applied research

suggestions for tightening the research component
- standardized battery and use of full spectrum assessment formats
- tracking system
- development of regular follow up and cohort enlargement

implications re staff
- core staff and seconded positions
- staff training and supervision

implications re program
- accountability
- research review
- client coordination

summary recommendations

One cannot but be struck by the number and diversity of accomplishments of the LC in the three year evaluation period.

With a staff of 6 full time and three seconded persons the Centre has processed 820 referrals, provided programs to 120 persons with a learning disability and their families, secured $121,000. in research funds, reported on nine pilot research projects, initiated a comprehensive Learning Disabilities Research Centre with support of the community, University library and other groups concerned with L.D. and developed joint projects with at least three school boards. Perhaps the greater accomplishment must be the establishment (in the eyes of the consortium members, educational community and general public) of an operational, viable and respected focus for learning disabilities in the Calgary region during a time of severe economic restraint.

Evaluation Process and Report

While there were numerous stylistic changes required in preparing the first report, the format is readable and clear. There still needs to be a clearer synthesis of the separate sections within the report and wider use of appendices, but on the whole the report covers the material presented well.

The data presentation is clear and, as far as is possible to check, accurate. Tables are clearly and consistently labelled, the "n" for each graph is included and discrepencies in each table carefully noted. The writer wisely avoided drawing elaborate conclusions and was careful to point out the limitations in the data. This type of data is best presented at the descriptive level of interpretation but it is strongly hoped that as the data on the cohort increases that more sophisticated statistical treatments will be possible. It will be particularly interesting to note changes in the client population and the changes in client (ie. student, teacher and parent) perceptions as the program evolves.

The initial evaluation model was reviewed to consider the match between the contracted elements and the final report. It is expected in any such process that some of the goals of the evaluation will not be completed because of changes in focus of the program, unrealistic expectations within the model and staff limitations. There were 32 goals in the evaluation model divided into service functions of:

Diagnostic service
Remedial program
Public education
General satisfaction

In each of these there were service goals and demonstration goals.

In general, the goals remain relevant but require review. The distinction between service and demonstration could be re-examined and the role of project research and cohorts needs to be augmented. While it is not feasible to have all clients assessed on any ongoing basis in all possible remediation domains, the fuller use of cohort data bases should allow for grouping persons with similar needs and looking at their progress.

The following is a breakdown of the 32 goals in the initial evaluation report. Specific information is appended.

Goals not implemented or addressed in the final report - 6 (18.7%).

Goals partially covered (ie. pre-admission tests done but not follow up) - 5 (15.6%).

Goals covered through pilot projects and reported within the technical reports - 5 (15.6%).

Goals wherein the data collection was part of the ongoing process but the information was not covered in the evaluation report - 6 (18.7%).

Goals which were part of the ongoing data collection process but reported only informally in the final report - 2 (6.25%).

Goals which were fully covered in the final report - 8 or 25%.

Thus 30 % were fully covered, 34.4% have data available but were not fully reported. Only 18% could not be reported and, of many of those are not critical to the report or are no longer relevant.

The major areas not covered were the parent programs, the effectiveness of the diagnostic instruments, the general description of changes effected through the remedial programs based on standardized tests and follow up information on graduates. These areas, I feel must be addressed in the final report in some fashion.

It would also be useful to include information on the film project which ran for approximately 2 years and a description of ongoing community support through a use of volunteers and donations.

Recommendation 1:

Include pilot project reports on parent groups, film project and any other major project not in the final report.

Recommendation 2:

Provide follow up information on graduates from LC. programs.

Recommendation 3:

Present data on standardized tests as is available grouped into appropriate cohorts (ie. by remediation category, by age etc.).

Recommendation 4:

Discuss which tests were useful and which were not.

Applied Research Model

An evaluation process is an essential component of a Centre whose aim is the integration of service, education and research. It should be obvious that there must be an ongoing mechanism of evaluation that is not considered external to the program but an integral part of all aspects of service - from identifying needs of families and persons with a learning disability, the services they have used, the nature of their disabilities, the techniques used to ameliorate or compensate for these disabilities and the impact of remediation on the family, the child's success and on the education system. Such a process is beyond the confines of "research as controlled intervention"; it is monitored clinical practice that promises a base of information; giving feedback to staff and clients about progress; monitoring program effectiveness and creating a dynamic base from which questions and research directions emerge.

This three year project has provided an opportunity to experiment with, and refine the evaluation process.

Recommendation 5:

With further changes, the evaluation model should become part of the ongoing character of the LC. Reports should be prepared at least every three years to monitor change and to further refine the process of program evaluation.

While the research/service potential of a Centre such as the LC cannot be underestimated, one must seriously recognize the difficulties in integrating research into a viable service model. When the Learning Centre began, there was an understandable concentration on the service components of the program to establish credibility and a base of operations. It is therefore very reassuring to note that there appears to be an increasing commitment to practical research strategies within the regular operation of the Centre's programs. Some of these are:

1. While there were few pilot projects in the first year of operation, it is now the policy to involve each staff in a research project.

2. There appears to be an understanding of the value of pre/post test measures for group projects.

3. Although not dealt with in the evaluation report, all students are retested at the end of the remedial process, thereby increasing the available cohort of persons with a learning disability who have received documented treatment services from the LC.

4. The descriptions of the pilot projects indicates a commitment to thorough descriptions of methods used and it is hoped that such clear description methodology is apparent in the individual client files (as was the commitment in the initial evaluation model).

5. There is also an evident commitment to the development of situation specific measurement.

The LC has served a broad range of clients -- all aspects of difficulty in learning-severe to mild degrees of learning disabilities - and all ages from young children to adults. Although it would have been easier to specialize during the start up phase, the Centre, by diversifying has identified many research directions for the future.

Recommendation 6:

LC continue to address needs of all L.D. persons as they arise e.g., adults, pre-schoolers, and that the needs of these groups be documented in technical reports for dissemination to interested groups.

The LC has also shown good research strategy in its selection of research topics. It specialized in one key area - Instrumental Enrichment (IE) to establish a firm research profile while experimenting in a wide range of current topics e.g., repeated reading, cognitive behavior modification, strategy vs specific remediation, math projects. As the size of the project base increases it will become possible for individual remediation to occur using the established researched methods. These individual records will then augment the data base for these methods.

Recommendation 7:

The LC continue to expand research re application of IE.

Recommendation 8:

The LC document and prepare teaching protocols from pilot and research projects that can be used in individual remediation, in classrooms, etc. The results from these situations should be added to the research project cohort, e.g., 'repeated reading' as a technique would become part of teaching resource. When used with student as a part of 1:1 remedial program, data would be recorded as in original research project. This data on the success of the student would then be entered into the repeated reading data file.

Design Problems in Applied Research

a) research design

The obligation to offer service to those referred, has created a major practical and ethical dilemma- that of finding control groups for the many projects that are part of the overall research program. At the LC it is doubly difficult because of the diversity in the nature of the learning disabilities being studied. In response to this, the Centre has evolved a research strategy of comparing one strategy "a" with that strategy plus an additional strategy "a + b". (cf. pilot projects - repeated readings - cognitive behavior modification and listening skills - mathematics skill program - orienteering). These designs are difficult at the best of times, and are further complicated by the lack of control groups and the absence of presentation strategy b in isolation. The groups in the pilot projects are too small to allow for the parcelling of the relative effects of the two strategies, and the spurious effect caused by diverse nature of the subjects could eliminate any of the group effects.

It is therefore strongly recommended that the research staff and the project staff become familiar with multiple base line techniques which allow the subject's performance prior to the implementation of the intervention to become the base line from which effectiveness is determined ie. the subject acts as his own control. If the recommendation below, re the creation of individual data files for each client were implemented at referral with retesting at intake, the use of multiple base line techniques could be easily implemented.

b) control group

Rather than dismiss the need for control groups, it is suggested that the LC utilize their existing data to create a series of data files that will, over time, general 'change scores' - ie. how much change occurs without direct intervention in the major domains of study at the LC e.g., reading, writing, math, etc. By building up a data file from waiting lists, (using DAT, LAC, etc. information) co-operating classrooms, and persons in program for other problems, the Centre will, over time create a base from which a set of quasi control groups can be generated (by age and severity of disability).

To accomplish this. existing client files would be surveyed to identify scores on standardized measures in selected domains e.g., reading, math, writing, etc. These would be translated into grade/age equivalents. Repeated testings on these measures, client descriptions and the time interval between administration would be entered. Existing repeated scores from persons in L.D. classrooms, in resource rooms, in other L.D. facilities could be sought and added.

Direct sollicitation of measures, repeated at a 12 week interval (chosen because most projects appear to operate on a 12 week time frame) could also be sought from the above sources. Clients on waiting lists could be tested at a 12 week interval. From the hundreds of files entered cohorts could be generated e.g., what is the average gain in Reading scores of 8-12 year old boys who have a severe, ie. 3 year delay, reading disability.

Recommendation 9:

Staff become familiar with alternate research designs, e.g., multiple base line and cross over design for use with pilot projects.

Recommendation 10:

If multiple base line research is not possible then it would be recommended that the centre make broader use of cross over designs. This would involve longer projects but would provide better separation of the research information.

Recommendation 11:

Funding or staff commitment should be sought to implement the above data base and commence testing of potential clients as soon as they are referred.

c) transfer issues

The small sample size in pilot projects necessitates that the pilot be used primarily to indicate trends and potential for further research. The ideal situation, and the one currently supported by the LC, would be the transference of research projects to school settings with a LC staff as the teacher/researcher or with a teacher affiliate in charge of the project. This not only allows a larger 'n' for the studies but ensures that the concept will be transferable to a classroom setting.

Suggestions for tightening the applied research component of the LC

a) Standardized test battery and the use of the full spectrum of assessment techniques.

It was recommended in the initial evaluation model that a small standardized battery of tests be used with all students who are referred to the LC. It was the understanding of the external consultant, that, while there was some reluctance to use tests which had not been developed specifically for the population, and also some reluctance to interfere with remediation time, that pre post testing was being done to the extent possible. It is extremely unfortunate that this information is not included in the evaluation report. Much of this data was used in describing pilot projects but there needs to be a description of the present sample, incomplete though it may be. The initial evaluation model, the early discussions and indeed many of the reports from DAT nad LAC include three basic measures -- Woodcock Johnson, the KeyMath and an intelligence score. While it is recognized that these tests have many drawbacks and could be improved it would seem desireable to salvage what scores do exist for the close to 150 students seen to date.

While it is important that the LC establish the data base using existing tests, the LC staff must decide what battery will be used as a battery for all clients. This is not to imply that changes cannot be made or that staff would not select the instruments most suited to their needs.

Recommendation 12:

Scores on the 3 tests mentioned, or other equivalent tests, be extracted from files at the following time periods: a) in the referral process; b) initial assessment; c) post tests or follow up, and analyzed to prepare a description of learning characteristics of the sample.

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b) Tracking system

The richness of the LC information system has barely been touched in the present evaluation report. During 1981, a tracking system was designed but was not fully implemented because of staff cuts. However this type of information will become even more important as the cohort of students grows. At the very minimum, it is important to track all clients at referral, initial interview, during remediation or referral to another source and one year post discharge. Once tracking is implemented at each of these times, the information system will provide readily available descriptors of the program over time, e.g., average time on waiting lists; most common referring; agents; length of time in other programs for graduates and those referred directly from assessment. It will also allow descriptions at a specific point in time, ie. how many clients are:

a) in referral process
b) on waiting list
c) in projects
d) in remediation
e) on follow up

While this was not presented in the evaluation report, much of the information is available in the files.

Recommendation 13:

That short term funding or staff commitment be sought to translate file records into computerized tracking system for the past 2 years (3 if possible).

Recommendation 14:

That a tracking system become integral part of client coordination component of program.

A useful technique for tracking and monitoring long term goals is the Goal Attainment Scale (GAS). It is used widely in Individual Education Plan (IEP) and program monitoring because it is compatible with all test formats and types of goals. Since the goal domains for the LC have already been identified: academic, processing, inter-agency, personal - social and compensatory skills, these could become the heading for goal attainment scales of attached. The goals are monitored by selecting the level of attainment within the goal record. Because all goals use the same scaling technique ie.

+ 2 - most desireable outcome: description
+ 1 - more than expected outcome: description
0 - expected outcome: description
- 1 - less than expected outcome: description
- 2 - least desireable outcome: description

The monitoring process using the goal attainment record takes minutes and can be done by all stakeholders. GAS can be used for long term goals, for project goals, individual remediation or for self monitoring by clients. It clearly identifies the expectations of the parties and can become the method for including all parties in the negotiation of goals. If general long range goals were set for each stage of the LC process e.g., referral, initial assessment, program, referral, follow up, these could be used in conjunction with the tracking system.

Recommendation 15:

Funding or staff commitment be secured to implement an accountable goal system as part of the Individual education plan process.

Implications for staff

1. To successfully operate a centre such as the LC, it is imperative that the senior core staff all understand the nature of research within a clinical setting.

Recommendation 16:

Clearly identify research responsibilities of senior core staff. Ongoing data collection and monitoring should be the responsibility of the person in charge of an area e.g., Public education, client coordination, project management, etc. rather than delegating all responsibility to a separate division. The research staff should oversee mechanisms for data entry, data analysis and facilitate funded research. Only when data collection is part of the operation of key LC functions will the marriage between research and clinical and research/education occur.

Staff training or recruitment of more joint university centre positions might accomplish this.

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2. It is also important that seconded staff be given proper orientation, not only of the clinical program at the centre but of the integral nature of research at the centre.

Recommendation 17:

Staff should receive training in practical research technology, design and literature use as part of their inservice training.

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3. The lack of reports in the family area, the lack of client tracking and at the same time the potential for research in this area would suggest that perhaps a social worker with a research background or some sociological research training would be an important addition to the LC complement.

This could be done either through project funding, a cross appointment at the U of C or by training one of the present staff in the needed skills.

Recommendation 18:

LC clearly focus on client coordination/family support as applied research area.

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4. It would seem important to extend the concept of secondment to disciplines other than teaching. The learning centre base is well established and would benefit from attracting diversification through short term secondment within education or other systems e.g., social work, DT, speed, Psychology, physical education, etc. If this were to be the case, it is suggested that one of the senior staff assume responsibility for coordinating a multi-disciplinary internship for professionals. Perhaps University credit could be arranged for those who request it. It would appear that the LC mandate of clinical/research and education could be focused in such an offering.

Recommendation 19:

Extend secondment as professional internship to other disciplines.

Recommendation 20:

Develop internship/secondment training process.

Implications for program

Given the immense strides made at the LC during the past three years it is important that the programs now fully accept the challenge to become accountable. In doing so they will provide an example for other educational settings.

Movement toward IEP, as recommended in the evaluation report should be in process, including fully documented and measureable goals. Once the inhouse system is operational, steps should be taken to track graduates or those referred to other settings using similar procedures. As stated so eloquently in the evaluation report the LC is only one alternative in the system, but it is the alternative charged with developing research functions.

Recommendation 21:

The IEP with monitored goals be implemented for all intakes and as much as possible for those in early stages of program.

Implications for Research

The ongoing research component which was subsumed under the evaluation requirement should not be allowed to cease but should continue. It should include standardized tests, IEP goal tracking and client satisfaction measures. This should be as funded as a basic component on an ongoing basis. Models are found in the "centre for research" concept through National Health and Welfare or the University Affiliate in the USA.

A research committee has been established and this committee should assume the powers of vetting proposed research as it meets the overall goals of the LC. This committee should also be expected to prepare a regular (every 1-3 yrs.) research report describing the progress and directions of the research component of the LC. The committee might wish liaison with the education research ethics committee at U of C which has a broad representation from the professional community.

Lastly, the philosophical stance taken by the LC re the pilot project concept should be applauded and expanded. Not only does it exemplify the research/clinical nature of the centre but it provides an excellent vehicle to teach staff the value of monitored clinical practice.

The LC has made an impressive beginning, one can only wait with anticipation to see many of their projects to fruition.

Respectfully submitted,

Marlett

Summary

The Learning Centre has made a commendable start in establishing it's mandate. The following is a summary of the major recomendations which will, hopefully, assist in promoting it's further development as a demonstration centre in learning disabilities.

For Immediate Attention - to be included in Final Report.

1. Include pilot project reports on parent groups, film projects and any other major project not in the final report.

2. Discuss which diagnostic and screening tests were useful and which were not.

To submit within 4 months - for report submission.

1. Extract age/grade equivalents (reading, math, I.Q.) from files at the following time periods: a) in the referral process; b) initial assessment; c) post tests or follow up, and analyze as description of learning characteristics of the sample.

2. Provide follow up information on clients who had received treatment at Learning Centre re: present status.

For Consideration - re: Future Directions.

1. The evaluation model should become part of the ongoing character of the Learning Centre. Reports should be prepared at least every three years to monitor change.

2. Learning Centre continue to address needs of learning disabled persons as they arise e.g., adults, pre-schoolers, and that these cases/groups be documented in technical reports for dissemination to interested groups.

3. The Learning Centre continue to expand research re application of IE instrumental enrichment.

4. The Learning Centre document and prepare teaching protocols from pilot and research projects that can be used in individual remediation, in classrooms, etc. Data on success of students to be entered into the cohort date file.

5. Develop use of multiple baseline research strategies or cross over designs rather than existing pilot projects designs.

6. Staff commitment be secured to implement an accountable goal system as part of the Learning Centre process.

7. Clearly identify research responsibilities of senior core staff. Ongoing data collection and monitoring should be the responsibility of the persion in charge of an area e.g., Public education, client coordination, project management, etc., rather than delegating all responsibility to a separate division. The research staff should oversee mechanisms for data entry, data analysis, and facilitate funded research.

8. Learning Centre staff should receive training in practical research technology, design and literature use as part of their inhouse training.

9. Learning Centre clearly focus on client coordination/family as applied research area.

10. Extend secondment as professional training to other disciplines.

11. Develop internship/secondment training process.

NJM/fm

Current Status of Evaluation Goals as set

LEARNING CENTRE EVALUATION OVERVIEW - JUNE 1980

VARIABLES	DATA	INSTRUMENTS	STATUS DURING 3 YEARS	STATUS FINAL REPORT
Service				
(1) Effectiveness in describing child's problem to parents and teacher.	Classroom teacher & parent reports	S.W. Questionaire done with parents follow up call	ongoing part of program	covered effectively
(2) Effectiveness of diagnostic instruments in developing remedial goals.	Staff Reports	Included in resource form	ongoing part of program (informal)	not covered
(3) Staff satisfaction with selected tests re: ease and effectiveness of administration and interpretation.	Staff/ teacher	Resource form	ongoing (informal)	not covered
Demonstration				
(1) Effectiveness of prepared materials (e.g., aides and packaged materials of selected diagnostic assessment procedures in inservice and preservice teaching).	Responses from teachers & staff		eg. IE repeated reading	covered indirectly through education
(2) Evaluate effectiveness of selected instruments re predicting remediation outcomes.	Initial scores on diagnostic assessments	I.E.P. Standardized tests	not done	not done

VARIABLES	DATA	INSTRUMENTS	STATUS DURING 3 YEARS	STATUS FINAL REPORT
Academic Outcome Service				
(1) Achievement of academic goals as set in I.E.P. by teacher, classroom teacher and parent etc.	Progress on I.E.P. goal	I.E.P. form (full team)	done informally progress made in yr. 3	random sample (only 56% had goals set)
(2) Effectiveness of remediation in producing increase in academic performance on standardized tests.	Achievement tests	Woodcock Key Math WRAT (Eval.staff)	done as part of remediation using approp. tests - not nec.battery	not reported but available
(3) Effectiveness of remediation in producing increase in performance in grade level material as selected by the classroom teacher.	Scores on CLOZE test (comprehension) % correct on reading and math tests.	Classroom teacher chooses 6 samples of grade approp. materials 3 assigned to pre-- 3 assigned to post test (Eval.staff)	not done due to time constraints	not done due to time constraints
(4) Ratings of student strengths and weakness and rate of change in academic areas.	a) Classroom teacher report. b) Parent report c) Student report	Teacher question (classroom) Parent question Student question	done at referral not done apparently at follow-up not initiated	pretest reported not initiated

VARIABLES	DATA	INSTRUMENTS	STATUS DURING 3 YEARS	STATUS FINAL REPORT
Demonstration				
(1) Effectiveness of various teaching approaches/materials etc.	Student variable results & details of teaching approaches Response to methods & materials	Lesson plan with details of methods used (teacher)	done informally some attempts made to classify treatments improvements noted in year 3	some data pulled into project report e.g., repeated reading
Social/Behavioural Outcomes Service				
(1) Achievement of social/behavioural goals as set in I.E.P. by teachers, classroom teachers, parents, etc. at I.E.P. conference.	Progress on I.E.P. grade.	I.E.P. form (full team)	informal ongoing	sample done
(2) Independent observation of classroom behaviour as directed by preliminary assessment of child's problems - i.e., behaviour specific observation.	Frequencies of behaviour	Time sampling (independent obs.)	done in certain projects, attempted as general process but too time consuming	reported in individ. projects eg. -B mod. listening
(3) Social and behavioural change as measured by standardized rating scales.	Scores on rating scales	Built into parent, teacher & student question.	done at intake	intake info. reported

VARIABLES	DATA	INSTRUMENTS	STATUS DURING 3 YEARS	STATUS FINAL REPORT
(4) Social and behavioural change as measured by informal ratings.	Change scores on parent & teacher reports.	Parent/teacher & student question.	done at intake	intake info. reported
Demonstration				
(1) Effectiveness of the various intervention strategies, e.g., teaching coping skills. stress reduction, behaviour modificatio .	a) Student inform. b) details of inter-vention c) response to inter-vention	"Lesson" plan with details	project basis	cf pilot projects
(2) Effectiveness of professional teaching methods based on results of above material i.e., materials on teaching coping skills, attention, stress reduction.	Reports of work-shop students	Inservice/ present. question.	ongoing	devel. done
Attitude change				
Service				
(1) Change in self concept as result of intervention.	Scores on self concept test	*Piers-Harris	for project or selected 1:1 clients only - could likely be pulled from files but not concerned in report.	
(2) Change in level of aspiration, expectations, attitude about handicap and locus of control as a result of intervention.	a) response to question b) level of aspiration test memory	Parent/teacher/ student question. Student on pre/post.	"	"
(3) Change in achievement anxiety and coping skills.	Response to questions by student	ALPERT-HABER test of coping skills	"	"

VARIABLES	DATA	INSTRUMENTS	STATUS DURING 3 YEARS	STATUS FINAL REPORT
I Public Education				
Service				
(1) Effectiveness of presentation to groups (media not included because of expense)	Teacher ratings	page 1 of question	ongoing	covered
Demonstration				
(1) Packaging of most effective aspects of group presentation for media coverage.				not reported in final report
(2) Ease of dissemination of program and research materials to media.				
II Professional Education				
Service				
(1) The effectiveness of pre service educational courses.	Student ratings	Question	ongoing	covered
(2) The effectiveness of practicum experience.	Student ratings.	Question	ongoing	covered
(3) The effectiveness of inservice offerings to professional groups.	Student ratings.	Question	Selected groups.	covered
Demonstration				
(1) The effectiveness of joing LC/SB projects in introducing 'new' methods into the school system.	ON PROJECT BASIS		projects covered but not the introduction	
(2) The effectiveness of various teaching methods in producing attitude change and increase in competence.	NOT DEVELOPED AS YET			

VARIABLES	DATA	INSTRUMENT	STATUS DURING 3 YEARS	STATUS FINAL REPORT
III Parent Education Service				
(1) The effectiveness of parent groups parent counselling, and other innovative parent projects in effecting attitude and skill change.	Parent report	Question	part of program	not covered
Demonstration				
(1) Effectiveness of parent project alternatives.	Parent report	Question.		not covered
I Parent satisfaction of program re: service delivered, e.g., initial contact, assessment results, remedial program, involvement, feedback, etc.	Parent report	Question	ongoing	covered
II Classroom teacher satisfaction (as above)	Teacher report	Question	"	"
III Staff satisfaction	Staff	"	ongoing informal	not covered
IV Board and ACLD satisfaction	Board	"	done in year 3	covered